Claims

1. A bicyclic compound of the formula I

5

20

$$\begin{array}{c|c}
R^1 & (R^a)_n \\
\hline
R^3 & R^2
\end{array}$$
(I)

in which

X, Y independently of one another are N or C-R4; 10 is 1, 2, 3, 4 or 5; n R^a is halogen, cyano, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkyl, C₁-C₆-haloalkoxy, C₂-C₆-alkenyl, C_2 - C_6 -alkenyloxy or $C(O)R^5$; R^1 is halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, 15 C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₈-cycloalkyl which is optionally mono- or polysubstituted by alkyl and/or halogen. C₅-C₈-cycloalkenyl which is optionally mono- or polysubstituted by alkyl and/or halogen, OR⁶, SR⁶ or NR⁷R⁸; R^2 is halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl,

Is halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl,

C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₈-cycloalkyl which is
optionally mono- or polysubstituted by alkyl and/or halogen,

C₅-C₈-cycloalkenyl which is optionally mono- or
polysubstituted by alkyl and/or halogen, OR⁶, SR⁶ or NR⁷R⁸;

R³ is hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or C₂-C₆-cycloalkyl

is hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or C₃-C₆-cycloalkyl which is optionally mono- or polysubstituted by alkyl and/or halogen;

R⁴ is hydrogen, halogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or C₃-C₆-cycloalkyl which is optionally mono- or polysubstituted by alkyl and/or halogen;

30 R^5 is hydrogen, OH, C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, C_1 - C_6 -haloalkyl, C_1 - C_6 -haloalkoxy, C_2 - C_6 -alkenyl, C_1 - C_6 -alkylamino or di- C_1 - C_6 -alkylamino, piperidin-1-yl, pyrrolidin-1-yl or morpholin-4-yl;

R⁶ is hydrogen, C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, phenyl- C_1 - C_4 -alkyl

			where phenyl may be mono- or polysubstituted by halogen,
			alkyl or alkoxy, C₂-C₅-alkenyl or COR ⁹ ;
		R ⁷ , R ⁸	independently of one another are hydrogen, C ₁ -C ₁₀ -alkyl,
5			C_2 - C_{10} -alkenyl, C_4 - C_{10} -alkadienyl, C_2 - C_{10} -alkynyl,
			C ₃ -C ₈ -cycloalkyl, C ₅ -C ₈ -cycloalkenyl, C ₅ -C ₁₀ -bicycloalkyl,
			phenyl, phenyl-C₁-C₄-alkyl, naphthyl,
			a 5- or 6-membered saturated or partially unsaturated
			heterocycle which may have 1, 2 or 3 heteroatoms selected
			from the group consisting of N, O and S as ring members,
10			or
			a 5- or 6-membered aromatic heterocycle which may have
			1, 2 or 3 heteroatoms selected from the group consisting of
			N, O and S as ring members,
			where the radicals mentioned as R ⁷ , R ⁸ may be partially or
15			fully halogenated and/or may have 1, 2 or 3 radicals R ^b ,
			where
			R ^b is selected from the group consisting of cyano, nitro,
			OH, C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, C_1 - C_6 -haloalkyl,
			C_1 - C_6 -haloalkoxy, C_1 - C_6 -alkylthio, C_2 - C_6 -alkenyl,
20			C_2 - C_6 -alkenyloxy, C_2 - C_6 -alkynyl, C_2 - C_6 -alkynyloxy,
			C ₁ -C ₆ -alkylamino, di-C ₁ -C ₆ -alkylamino, piperidin-1-yl,
			pyrrolidin-1-yl or morpholin-4-yl;
		R ⁷ and R ⁸	together with the nitrogen atom to which they are attached
			may also form a 5-, 6- or 7-membered saturated or
25			unsaturated heterocycle which may have 1, 2, 3 or 4 further
			heteroatoms selected from the group consisting of O, S, N
			and NR ¹⁰ as ring members and may be partially or fully
			halogenated and which may have 1, 2 or 3 radicals Rb; and
		R ⁹ , R ¹⁰	independently of one another are hydrogen or C ₁ -C ₆ -alkyl;
30		or an agricult	urally acceptable salt of a compound I,
	except for the compounds of the formula I in which R1 is OH, if Y a		compounds of the formula I in which R1 is OH, if Y and X are
		simultaneous	ly each C-R⁴;
		and also exce	ept for 2,4-dichloro-3-(o-methoxyphenyl)-1,8-naphthyridine.
35			
	2.	The compour each C-R ⁴ .	nd according to claim 1 of the formula I in which Y and X are

3. The compound according to claim 1 of the formula I in which Y is N and X

is C-R⁴.

- 4. The compound according to claim 1 of the formula I in which Y is C-R⁴ and X is N.
- 5. The compound according to any of the preceding claims of the formula I in which R^4 is hydrogen, C_1 - C_6 -alkyl or C_1 - C_6 -haloalkyl.
- 6. The compound according to any of the preceding claims of the formula I in which n is 2, 3, 4 or 5.
 - 7. The compound according to any of the preceding claims of the formula I in which the group

$$(R^{a})_{n} \quad \text{is} \quad R^{a2}$$

$$R^{a1} \qquad R^{a3}$$

$$R^{a4}$$

15

35

5

where

R^{a1} is fluorine, chlorine, trifluoromethyl or methyl;

R^{a2} is hydrogen or fluorine;

20 R^{a3} is hydrogen, fluorine, chlorine, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -alkoxycarbonyl;

R^{a4} is hydrogen, chlorine or fluorine;

R^{a5} is hydrogen, fluorine, chlorine, C₁-C₄-alkyl or C₁-C₄-alkoxy.

- The compound according to any of the preceding claims of the formula I in which R¹ is a group NR⁷R⁸ in which at least one of the radicals R⁷, R⁸ is different from hydrogen.
 - 9. The compound according to claim 8 of the formula I in which

30 R⁷ is C₁-C₆-alkyl, C₃-C₈-cycloalkyl which is optionally mono- or polysubstituted by alkyl and/or halogen, C₁-C₆-haloalkyl, phenyl-C₁-C₄-alkyl, C₂-C₆-alkenyl or C₂-C₆-alkynyl;

 R^8 is hydrogen, C_1 - C_6 -alkyl or C_2 - C_6 -alkenyl; or

R⁷,R⁸ together with the nitrogen atom to which they are attached are a saturated or partially unsaturated 5-, 6- or 7-membered nitrogen

heterocycle which may have 1 further heteroatom selected from the group consisting of O, S and NR^{10} as ring member and which may have 1 or 2 substituents selected from the group consisting of C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, halogen and hydroxyl, where R^{10} is as defined in claim 1.

5

- 10. The compound according to claim 1 of the formula I in which R¹ is hydroxyl and one of the radicals Y or X is N.
- 10 11. The compound according to any of claims 1 to 7 of the formula I in which R¹ is halogen.
 - 12. The compound according to claim 1 in which R² is hydroxyl, Y is C-R⁴ and X is C-R⁴ or N.

15

- 13. The compound according to any of claims 1 to 11 in which R^2 is halogen, C_1 - C_6 -alkyl or C_1 - C_6 -haloalkyl.
- 14. The use of a compound of the formula I

20

$$R^{1}$$
 $(R^{a})_{n}$
 (I)

in which

X, Y independently of one another are N or C-R⁴;

25

n

is 1, 2, 3, 4 or 5;

 R^a

is halogen, cyano, C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy,

C₁-C₆-haloalkyl, C₁-C₆-haloalkoxy, C₂-C₆-alkenyl,

 C_2 - C_6 -alkenyloxy or $C(O)R^5$;

 R^1

is halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl,

30

C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₈-cycloalkyl which is

optionally mono- or polysubstituted by alkyl and/or halogen,

C₅-C₈-cycloalkenyl which is optionally mono- or

polysubstituted by alkyl and/or halogen, OR⁶, SR⁶ or NR⁷R⁸;

 R^2

is halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl,

35

C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₈-cycloalkyl which is

		optionally mono- or polysubstituted by alkyl and/or halogen, C ₅ -C ₈ -cycloalkenyl which is optionally mono- or
		polysubstituted by alkyl and/or halogen, OR ⁶ , SR ⁶ or NR ⁷ R ⁸ ;
	R^3	is hydrogen, C ₁ -C ₆ -alkyl, C ₁ -C ₆ -haloalkyl or C ₃ -C ₆ -cycloalkyl
5		which is optionally mono- or polysubstituted by alkyl and/or
		halogen;
	R⁴	is hydrogen, halogen, C₁-C₀-alkyl, C₁-C₀-haloalkyl or
		C ₃ -C ₆ -cycloalkyl which is optionally mono- or
		polysubstituted by alkyl and/or halogen;
10	R⁵	is hydrogen, OH, C₁-C₀-alkyl, C₁-C₀-alkoxy, C₁-C₀-haloalkyl,
		C ₁ -C ₆ -haloalkoxy, C ₂ -C ₆ -alkenyl, C ₁ -C ₆ -alkylamino or
		di-C₁-C₅-alkylamino, piperidin-1-yl, pyrrolidin-1-yl or
		morpholin-4-yl;
	R ⁶	is hydrogen, C₁-C₀-alkyl, C₁-C₀-haloalkyl, phenyl-C₁-C₄-alkyl
15		where phenyl may be mono- or polysubstituted by halogen,
		alkyl or alkoxy, C₂-C₅-alkenyl or COR ⁹ ;
	R ⁷ , R ⁸	independently of one another are hydrogen, C ₁ -C ₁₀ -alkyl,
		C ₂ -C ₁₀ -alkenyl, C ₄ -C ₁₀ -alkadienyl, C ₂ -C ₁₀ -alkynyl,
		C₃-C₀-cycloalkyl, C₅-C₀-cycloalkenyl, C₅-C₁₀-bicycloalkyl,
20		phenyl, phenyl-C₁-C₄-alkyl, naphthyl,
		a 5- or 6-membered saturated or partially unsaturated
		heterocycle which may have 1, 2 or 3 heteroatoms selected
		from the group consisting of N, O and S as ring members,
		or
25		a 5- or 6-membered aromatic heterocycle which may have
		1, 2 or 3 heteroatoms selected from the group consisting of
		N, O and S as ring members,
		where the radicals mentioned as R ⁷ , R ⁸ may be partially or
		fully halogenated and/or may have 1, 2 or 3 radicals R ^b ,
30		where
		R ^b is selected from the group consisting of cyano, nitro,
		OH, C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, C_1 - C_6 -haloalkyl,
		C_1 - C_6 -haloalkoxy, C_1 - C_6 -alkylthio, C_2 - C_6 -alkenyl,
		C_2 - C_6 -alkenyloxy, C_2 - C_6 -alkynyl, C_2 - C_6 -alkynyloxy,
35		C ₁ -C ₆ -alkylamino, di-C ₁ -C ₆ -alkylamino, piperidin-1-yl,
		pyrrolidin-1-yl or morpholin-4-yl;
	R ⁷ and R ⁸	together with the nitrogen atom to which they are attached
		may also form a 5-, 6- or 7-membered saturated or
		unsaturated heterocycle which may have 1, 2, 3 or 4 further

heteroatoms selected from the group consisting of O, S, N and NR¹⁰ as ring members, and may be partially or fully halogenated and which may have 1, 2 or 3 radicals R^b; and R⁹, R¹⁰ independently of one another are hydrogen or C₁-C₆-alkyl; or an agriculturally acceptable salt thereof for controlling phytopathogenic fungi.

- 15. A method for controlling phytopathogenic fungi, which comprises treating the fungi or the materials, plants, the soil or seed to be protected against fungal attack with an effective amount of a compound of the formula I according to claim 14 and/or with an agriculturally acceptable salt of I.
- 16. A composition for controlling phytopathogenic fungi, comprising at least one compound of the formula I according to claim 14 and/or an
 15 agriculturally acceptable salt of I and at least one liquid or solid carrier.

17. A ketone of the formula IIID

20

25

30

5

10

in which

W' is C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₈-cycloalkyl which is optionally mono- or polysubstituted by alkyl and/or halogen, C₅-C₈-cycloalkenyl which is optionally mono- or polysubstituted by alkyl and/or halogen;

R^{a1} is fluorine, chlorine, trifluoromethyl or methyl;

R^{a2} is hydrogen or fluorine;

R^{a3} is hydrogen, fluorine, chlorine, cyano, C₁-C₄-alkyl, C₁-C₄-alkoxy or C₁-C₄-alkoxycarbonyl;

R^{a4} is hydrogen, chlorine or fluorine;

 R^{a5} is hydrogen, fluorine, chlorine, C_1 - C_4 -alkyl or C_1 - C_4 -alkoxy.